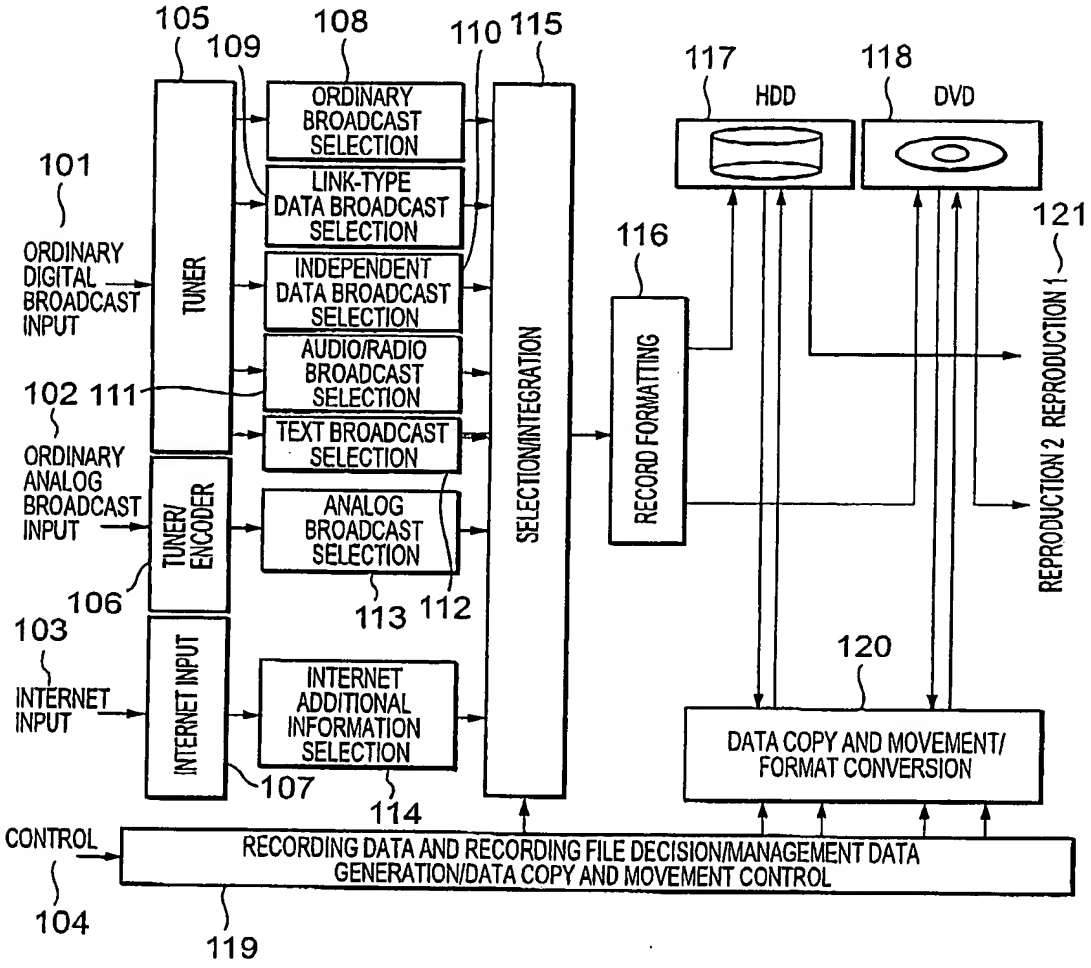
105
109
108
110
115
117
118
HDD
DVD
101
ORDINARY DIGITAL BROADCAST INPUT
TUNER
ORDINARY BROADCAST SELECTION
LINK-TYPE DATA BROADCAST SELECTION
INDEPENDENT DATA BROADCAST SELECTION
AUDIO/RADIO BROADCAST SELECTION
TEXT BROADCAST SELECTION
116
121
102
111
ORDINARY ANALOG BROADCAST INPUT
TUNER/ ENCODER
ANALOG BROADCAST SELECTION
SELECTION/INTEGRATION
RECORD FORMATTING
REPRODUCTION 1
REPRODUCTION 2
106
113
112
103
INTERNET INPUT
INTERNET ADDITIONAL INFORMATION SELECTION
120
DATA COPY AND MOVEMENT/ FORMAT CONVERSION
107
114
CONTROL
RECORDING DATA AND RECORDING FILE DECISION/MANAGEMENT DATA GENERATION/DATA COPY AND MOVEMENT CONTROL
104
119

FIG. 1

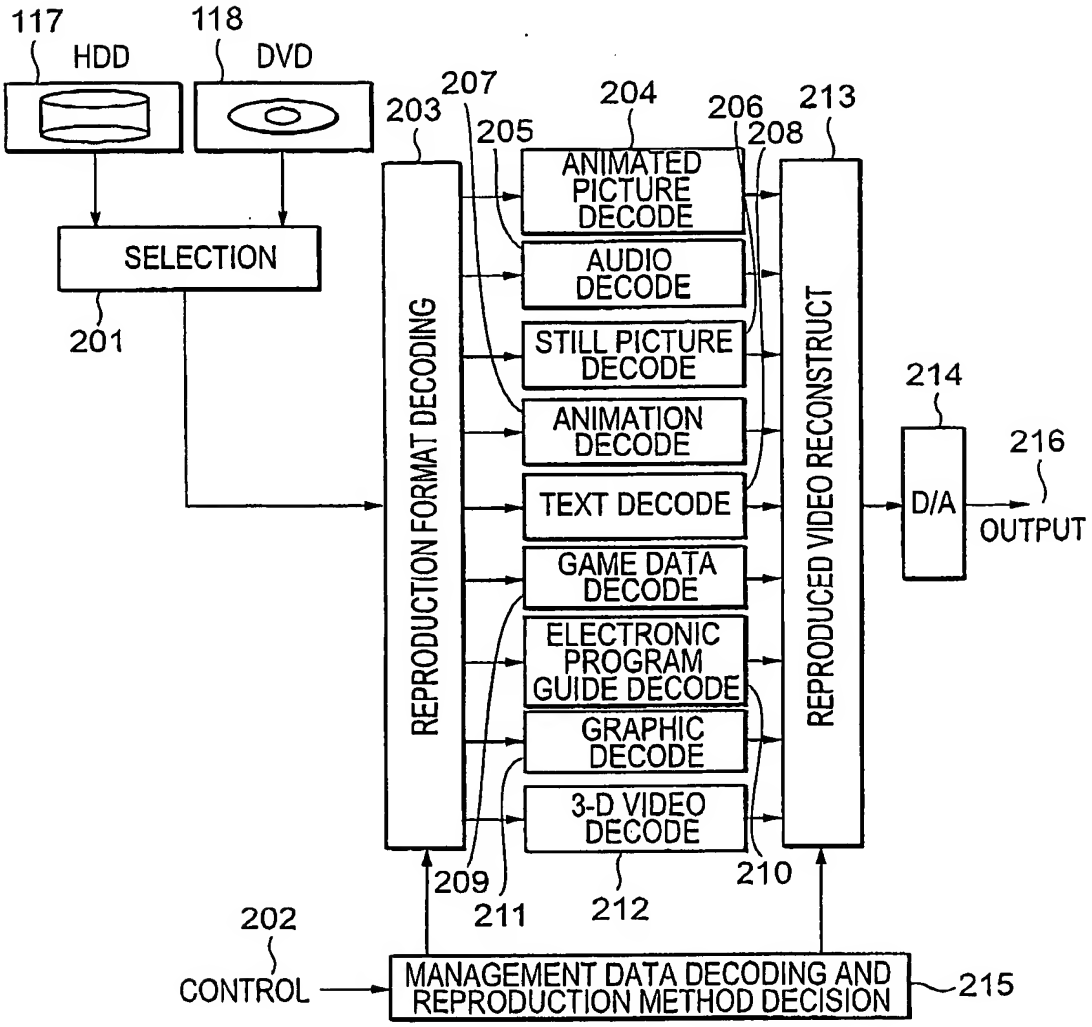
117
HDD
118
DVD
SELECTION
201
203
207
205
204
206
208
213
ANIMATED PICTURE DECODE
AUDIO DECODE
STILL PICTURE DECODE
ANIMATION DECODE
TEXT DECODE
GAME DATA DECODE
ELECTRONIC PROGRAM GUIDE DECODE
GRAPHIC DECODE
3-D VIDEO DECODE
REPRODUCTION FORMAT DECODING
REPRODUCED VIDEO RECONSTRUCT
214
D/A
216
OUTPUT
209
211
212
210
202
CONTROL
MANAGEMENT DATA DECODING AND REPRODUCTION METHOD DECISION
215

FIG. 2

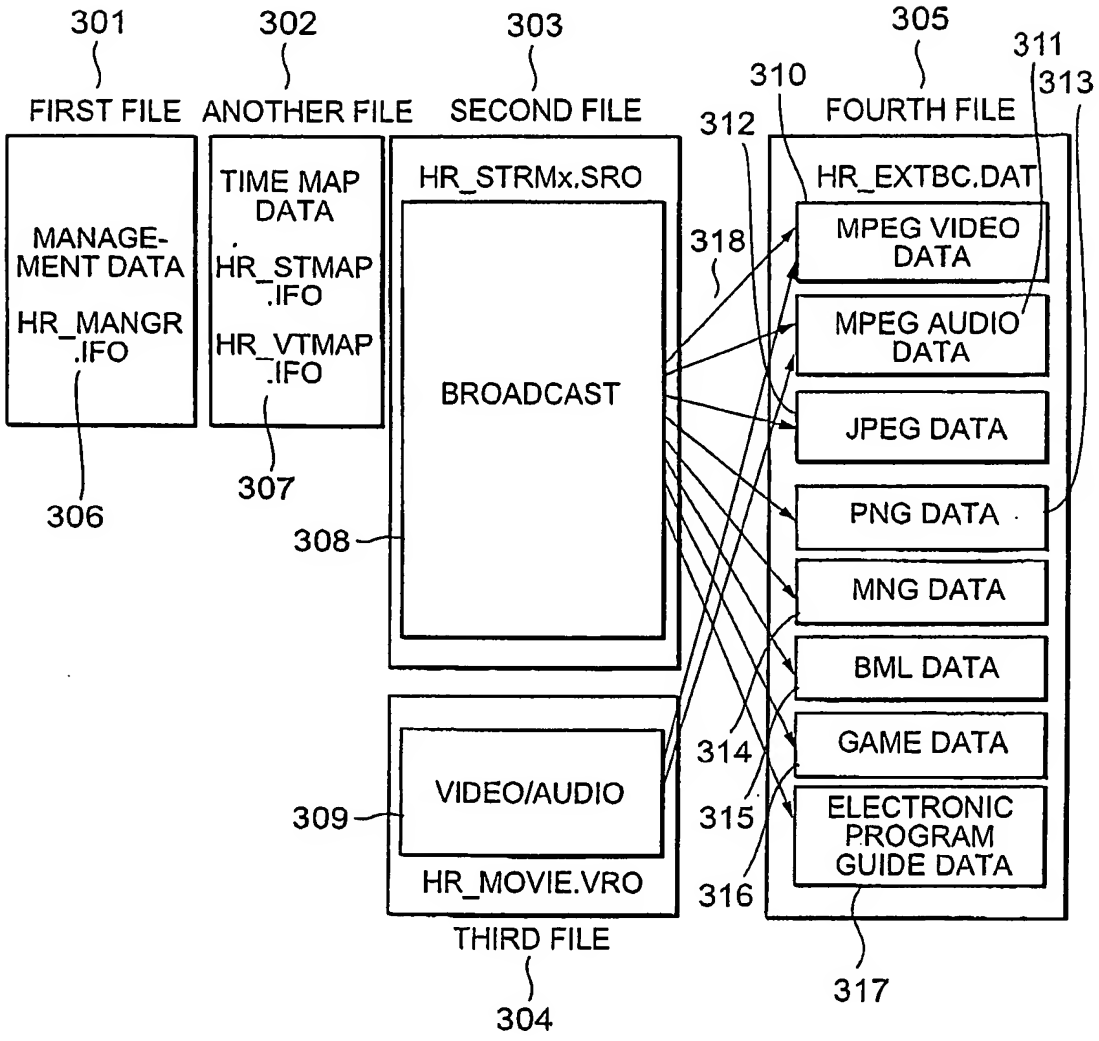
301
302
303
305
311
310
313
FIRST FILE
ANOTHER FILE
SECOND FILE
312
FOURTH FILE
MANAGE-
MENT DATA
HR_MANGR
.IFO
TIME MAP
DATA
HR_STMAP
.IFO
HR_VTMAP
.IFO
HR_STRMx.SRO
BROADCAST
HR_EXTBC.DAT
318
MPEG VIDEO
DATA
MPEG AUDIO
DATA
JPEG DATA
PNG DATA
MNG DATA
BML DATA
GAME DATA
ELECTRONIC
PROGRAM
GUIDE DATA
306
307
308
VIDEO/AUDIO
309
HR_MOVIE.VRO
314
315
316
THIRD FILE
304
317

FIG. 3

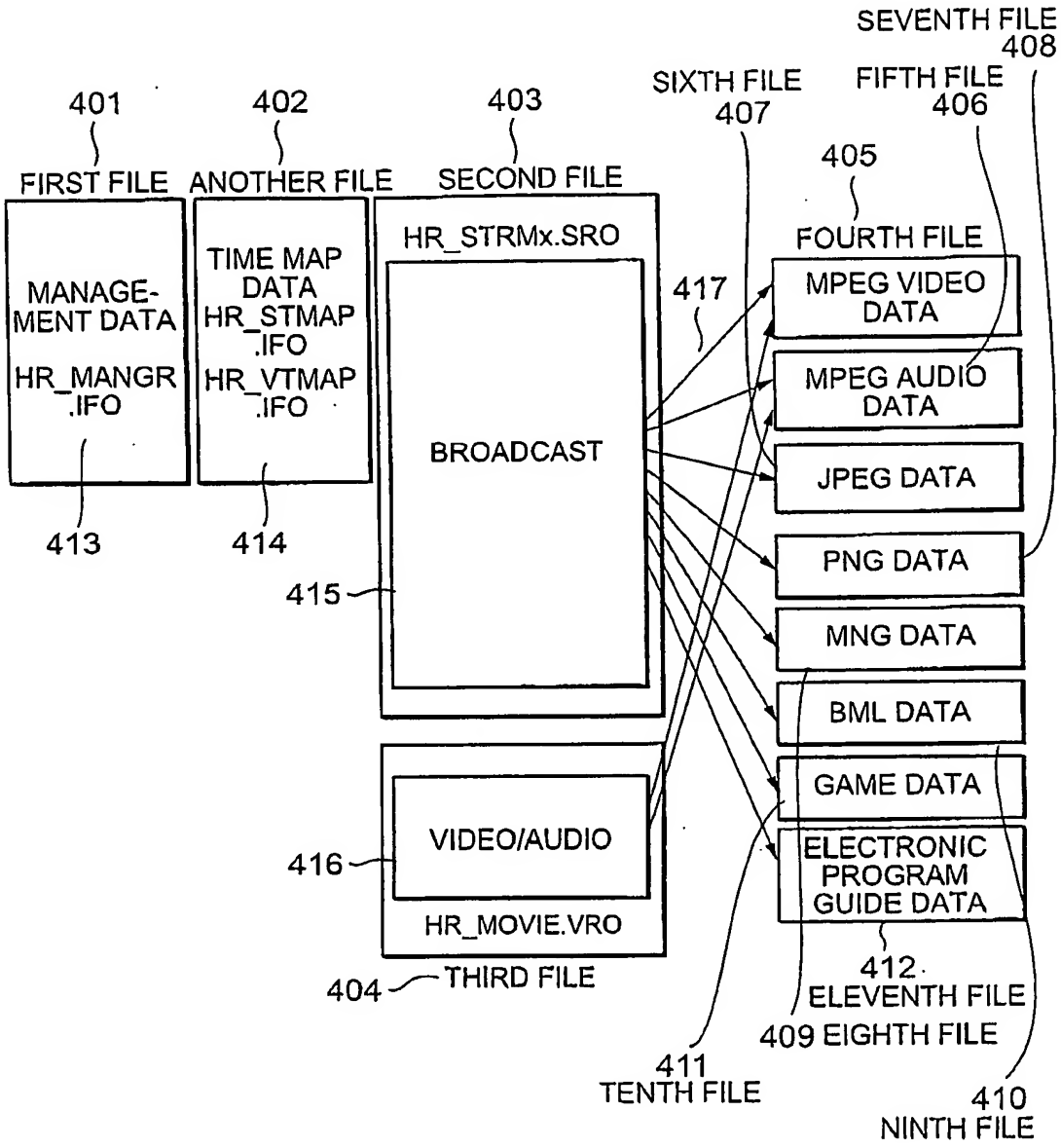
401
FIRST FILE
MANAGE-MENT DATA
HR_MANGR .IFO
413
402
ANOTHER FILE
TIME MAP DATA
HR_STMAP .IFO
HR_VTMAP .IFO
414
403
SECOND FILE
HR_STRMx.SRO
BROADCAST
415
VIDEO/AUDIO
416
HR_MOVIE.VRO
404 THIRD FILE
SIXTH FILE
407
417
SEVENTH FILE
408
FIFTH FILE
406
405
FOURTH FILE
MPEG VIDEO DATA
MPEG AUDIO DATA
JPEG DATA
PNG DATA
MNG DATA
BML DATA
GAME DATA
ELECTRONIC PROGRAM GUIDE DATA
412
ELEVENTH FILE
409 EIGHTH FILE
411
TENTH FILE
410
NINTH FILE

FIG. 4

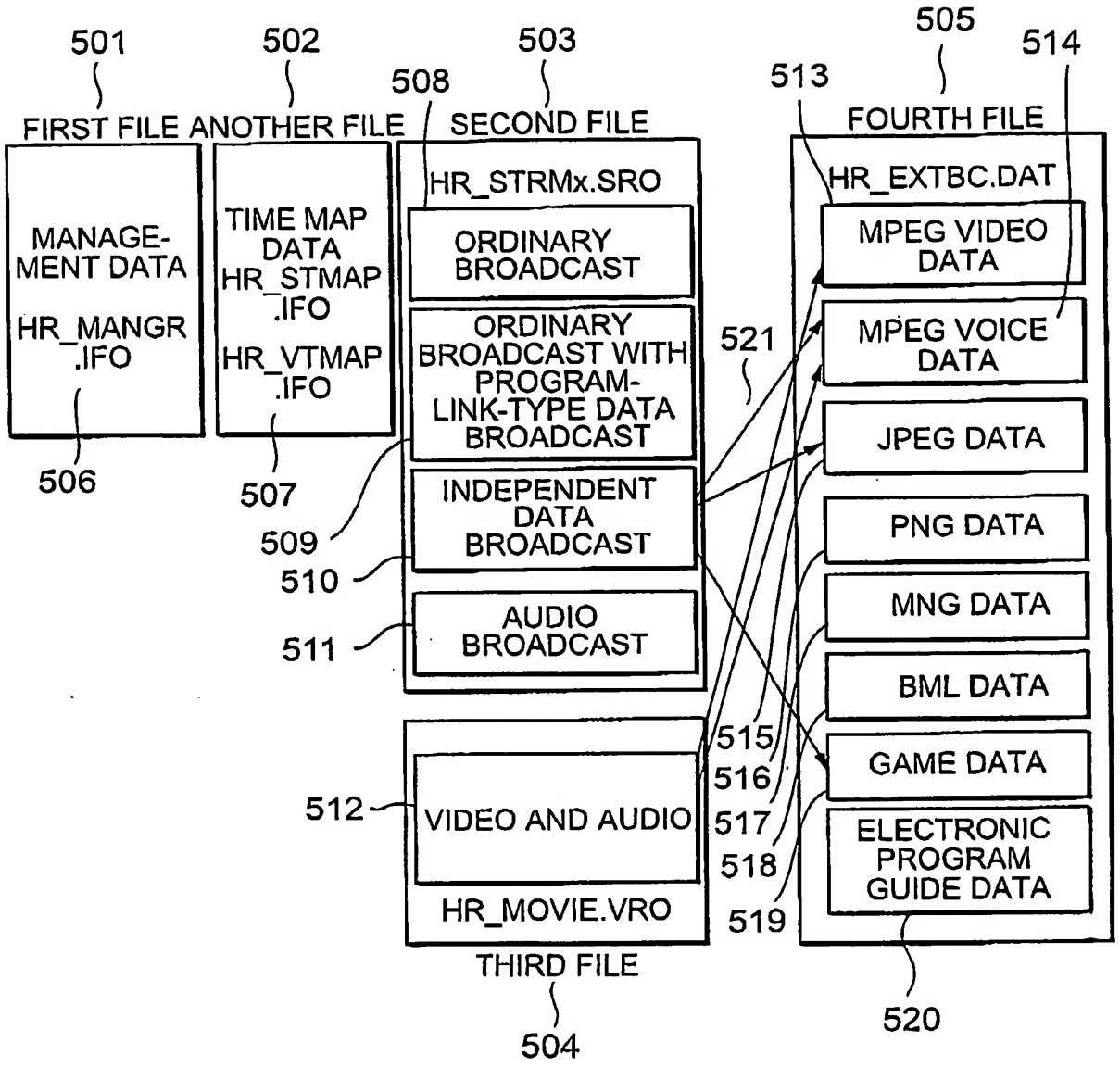
501
502
503
505
514
508
513
FIRST FILE
ANOTHER FILE
SECOND FILE
FOURTH FILE
MANAGE-MENT DATA
HR_MANGR .IFO
TIME MAP DATA HR_STMAP .IFO
HR_VTMAP .IFO
HR_STRMx.SRO
ORDINARY BROADCAST
ORDINARY BROADCAST WITH PROGRAM-LINK-TYPE DATA BROADCAST
INDEPENDENT DATA BROADCAST
AUDIO BROADCAST
HR_EXTBC.DAT
MPEG VIDEO DATA
MPEG VOICE DATA
JPEG DATA
PNG DATA
MNG DATA
BML DATA
GAME DATA
ELECTRONIC PROGRAM GUIDE DATA
521
506
507
509
510
511
512
VIDEO AND AUDIO
HR_MOVIE.VRO
515
516
517
518
519
THIRD FILE
504
520

FIG. 5

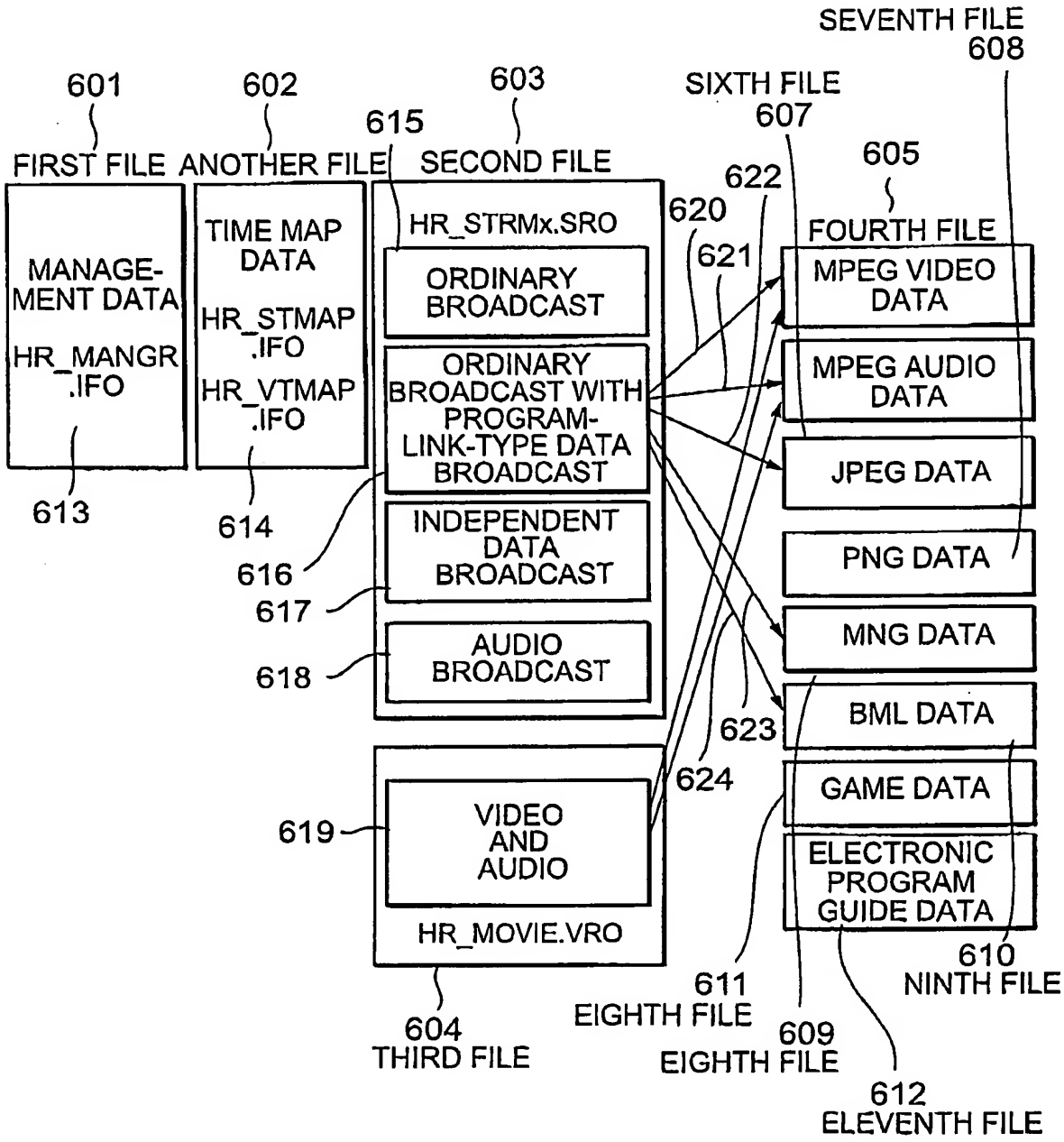
SEVENTH FILE
608
601
602
603
SIXTH FILE
607
615
605
FIRST FILE
ANOTHER FILE
SECOND FILE
622
620
621
MANAGE-
MENT DATA
HR_MANGR
.IFO
TIME MAP
DATA
HR_STMAP
.IFO
HR_VTMAP
.IFO
HR_STRMx.SRO
ORDINARY
BROADCAST
ORDINARY
BROADCAST WITH
PROGRAM-
LINK-TYPE DATA
BROADCAST
INDEPENDENT
DATA
BROADCAST
AUDIO
BROADCAST
FOURTH FILE
MPEG VIDEO
DATA
MPEG AUDIO
DATA
JPEG DATA
PNG DATA
MNG DATA
BML DATA
GAME DATA
ELECTRONIC
PROGRAM
GUIDE DATA
613
614
616
617
618
623
624
619
VIDEO
AND
AUDIO
HR_MOVIE.VRO
610
NINTH FILE
611
EIGHTH FILE
609
EIGHTH FILE
604
THIRD FILE
612
ELEVENTH FILE

FIG. 6

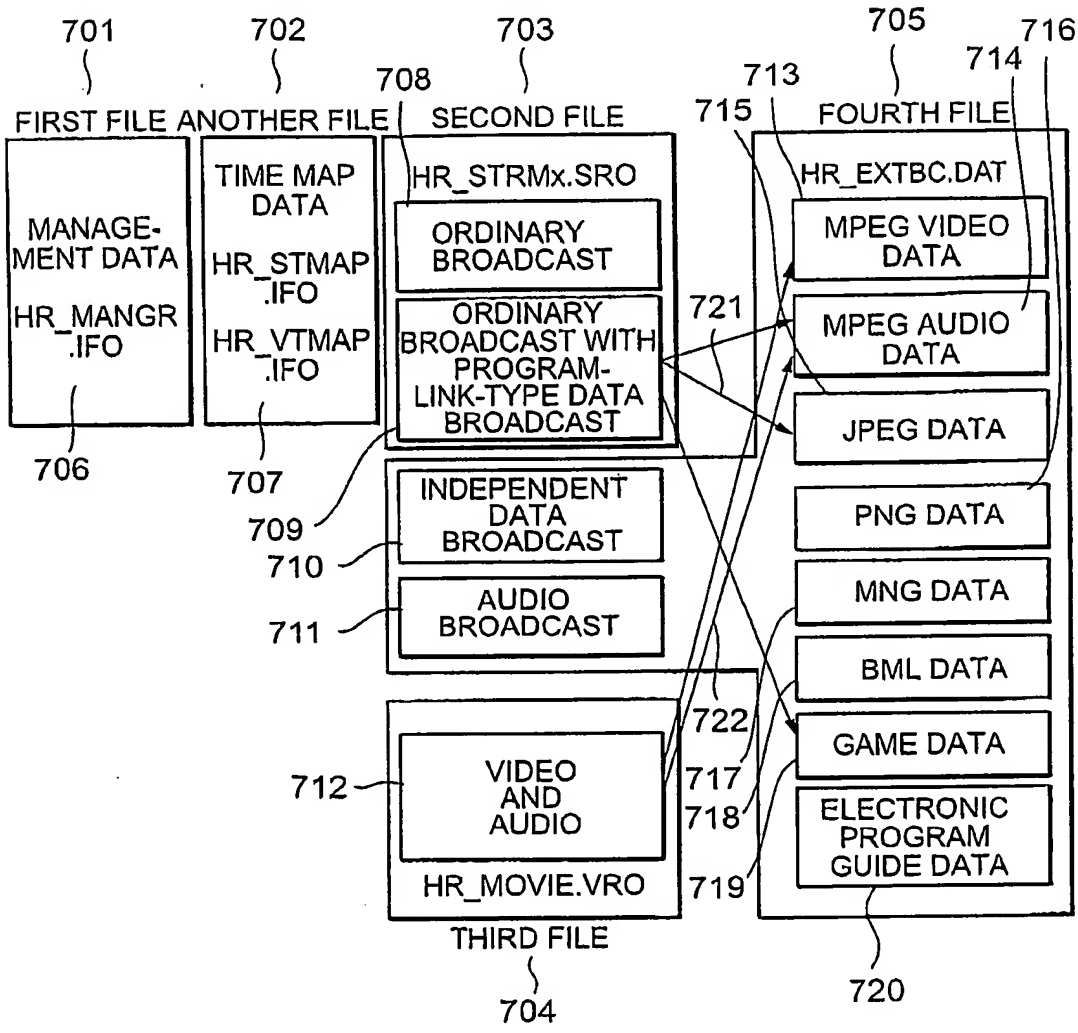
701
702
703
705
716
714
713
708
715
FIRST FILE
ANOTHER FILE
SECOND FILE
FOURTH FILE
MANAGE-MENT DATA
HR_MANGR .IFO
TIME MAP DATA
HR_STMAP .IFO
HR_VTMAP .IFO
HR_STRMx.SRO
ORDINARY BROADCAST
ORDINARY BROADCAST WITH PROGRAM-LINK-TYPE DATA BROADCAST
HR_EXTBC.DAT
MPEG VIDEO DATA
MPEG AUDIO DATA
JPEG DATA
PNG DATA
MNG DATA
BML DATA
GAME DATA
ELECTRONIC PROGRAM GUIDE DATA
721
722
717
718
719
706
707
709
710
711
INDEPENDENT DATA BROADCAST
AUDIO BROADCAST
712
VIDEO AND AUDIO
HR_MOVIE.VRO
THIRD FILE
704
720

FIG. 7

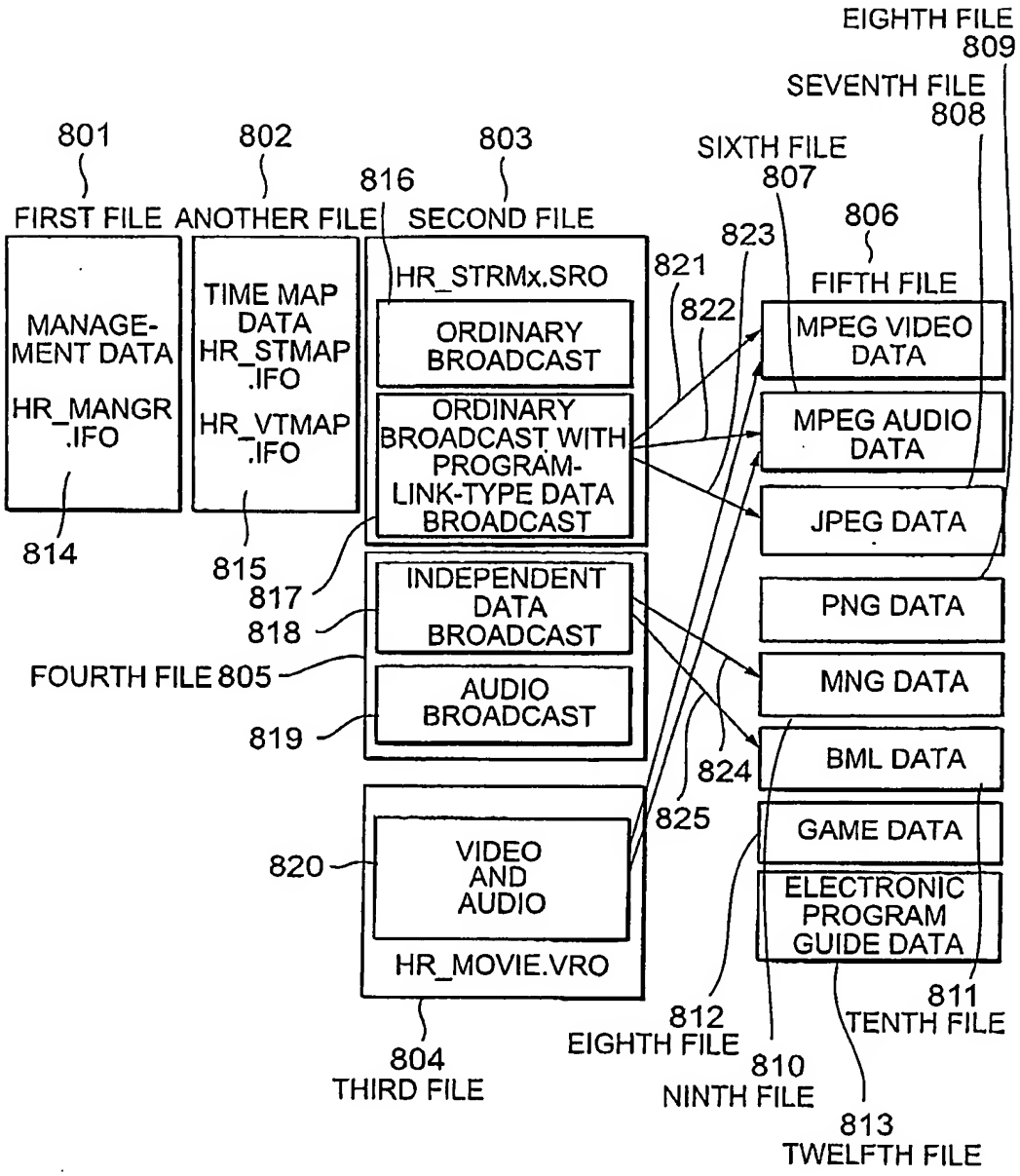
EIGHTH FILE
809
SEVENTH FILE
808
801
802
803
SIXTH FILE
807
816
FIRST FILE
ANOTHER FILE
SECOND FILE
806
823
821
FIFTH FILE
HR_STRMx.SRO
822
MANAGE-MENT DATA
HR_MANGR .IFO
TIME MAP DATA HR_STMAP .IFO
HR_VTMAP .IFO
ORDINARY BROADCAST
ORDINARY BROADCAST WITH PROGRAM-LINK-TYPE DATA BROADCAST
MPEG VIDEO DATA
MPEG AUDIO DATA
JPEG DATA
PNG DATA
MNG DATA
BML DATA
GAME DATA
ELECTRONIC PROGRAM GUIDE DATA
814
815
817
818
FOURTH FILE 805
819
INDEPENDENT DATA BROADCAST
AUDIO BROADCAST
824
825
820
VIDEO AND AUDIO
HR_MOVIE.VRO
804
THIRD FILE
812
EIGHTH FILE
810
NINTH FILE
811
TENTH FILE
813
TWELFTH FILE

FIG. 8

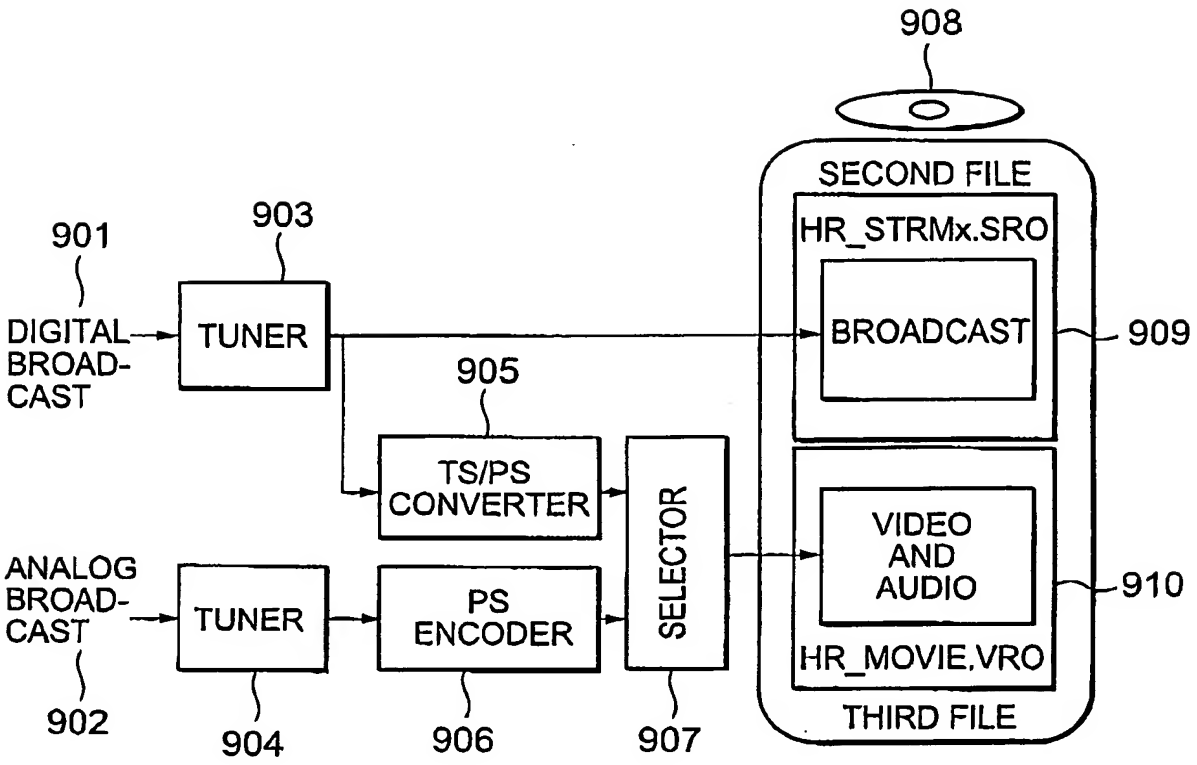
908
SECOND FILE
HR_STRMx.SRO
BROADCAST
909
901
903
DIGITAL BROAD-CAST
TUNER
905
TS/PS CONVERTER
SELECTOR
VIDEO AND AUDIO
910
ANALOG BROAD-CAST
TUNER
PS ENCODER
HR_MOVIE.VRO
THIRD FILE
902
904
906
907

FIG. 9

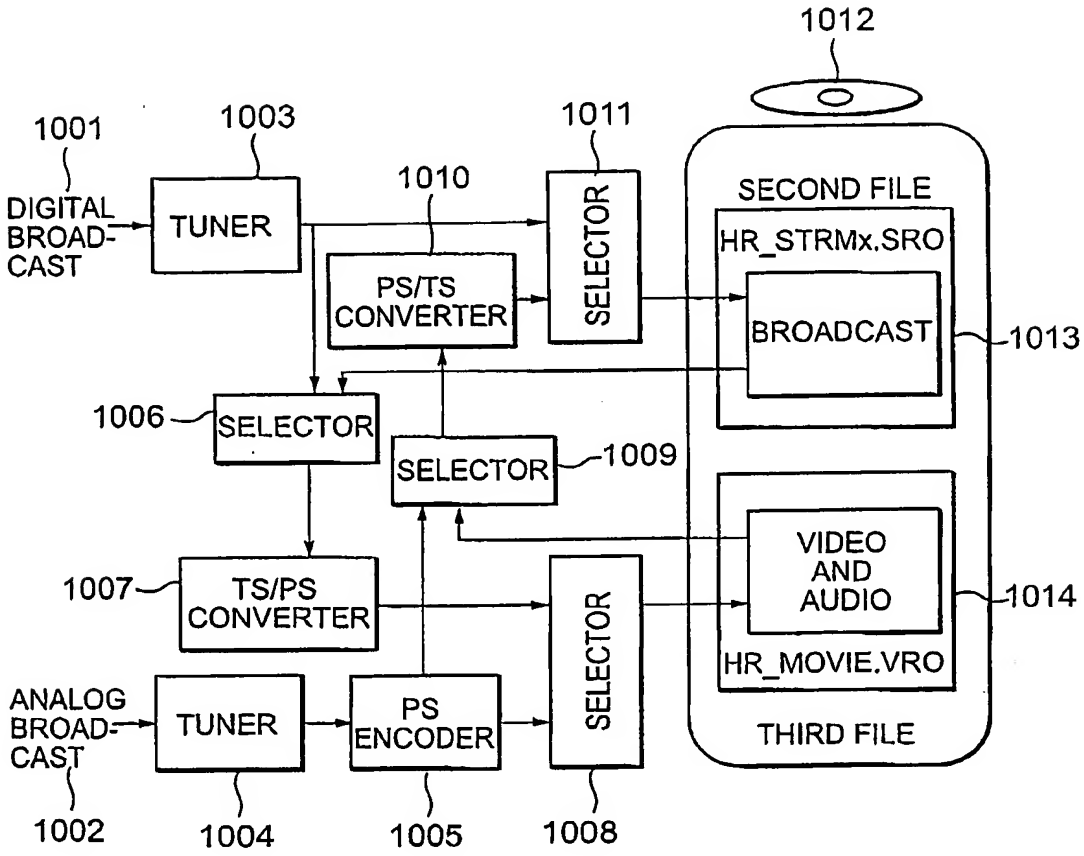
1012
1001
1003
1011
DIGITAL BROAD-CAST
TUNER
1010
SELECTOR
SECOND FILE
HR_STRMx.SRO
PS/TS CONVERTER
BROADCAST
1013
1006
SELECTOR
SELECTOR
1009
VIDEO AND AUDIO
1014
1007
TS/PS CONVERTER
SELECTOR
HR_MOVIE.VRO
ANALOG BROAD-CAST
TUNER
PS ENCODER
THIRD FILE
1002
1004
1005
1008

FIG. 10

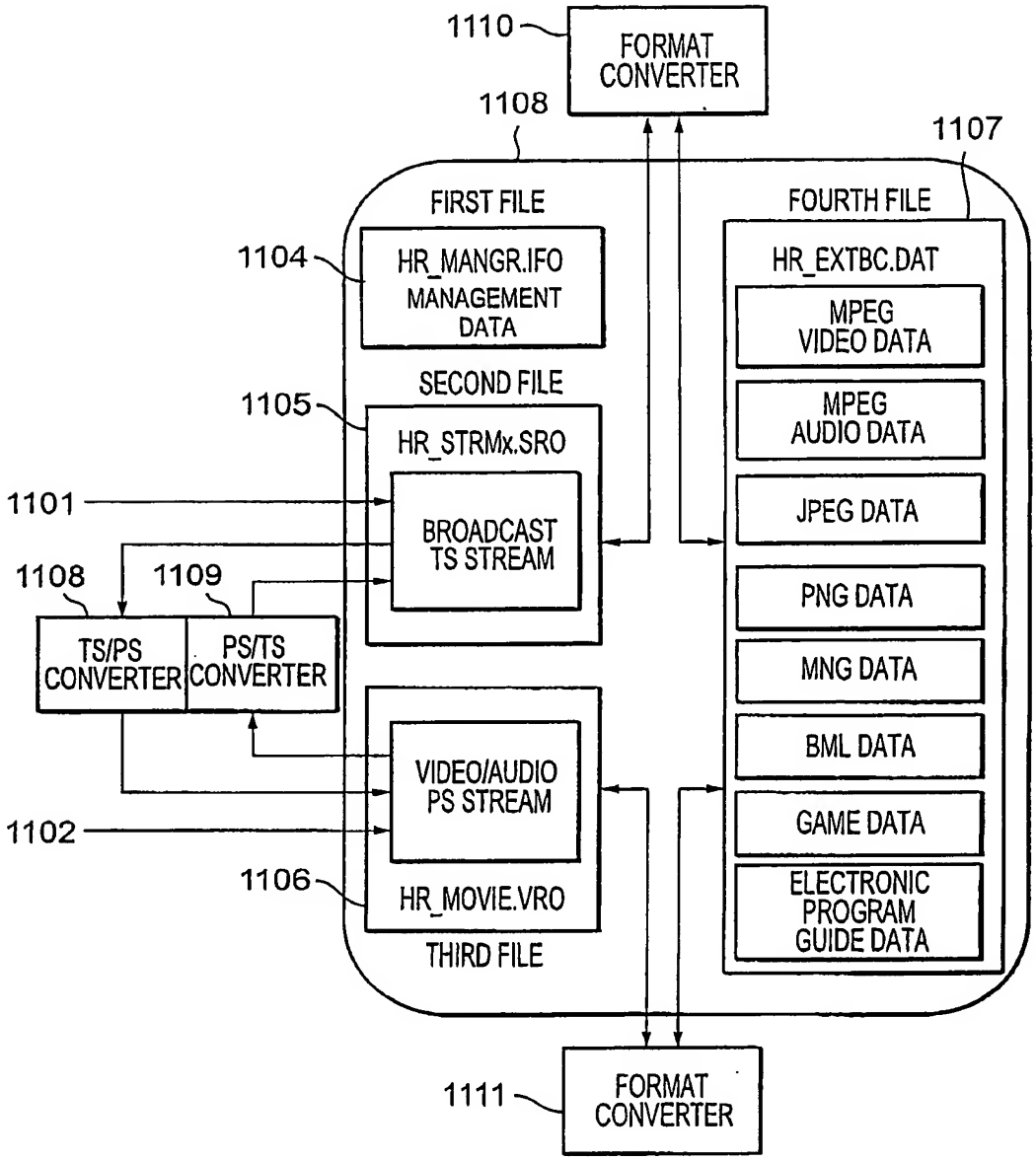
1110
FORMAT CONVERTER
1108
1107
FIRST FILE
1104
HR_MANGR.IFO
MANAGEMENT DATA
SECOND FILE
1105
HR_STRMx.SRO
1101
BROADCAST TS STREAM
1108
1109
TS/PS CONVERTER
PS/TS CONVERTER
VIDEO/AUDIO PS STREAM
1102
1106
HR_MOVIE.VRO
THIRD FILE
FOURTH FILE
HR_EXTBC.DAT
MPEG VIDEO DATA
MPEG AUDIO DATA
JPEG DATA
PNG DATA
MNG DATA
BML DATA
GAME DATA
ELECTRONIC PROGRAM GUIDE DATA
1111
FORMAT CONVERTER

FIG. 11

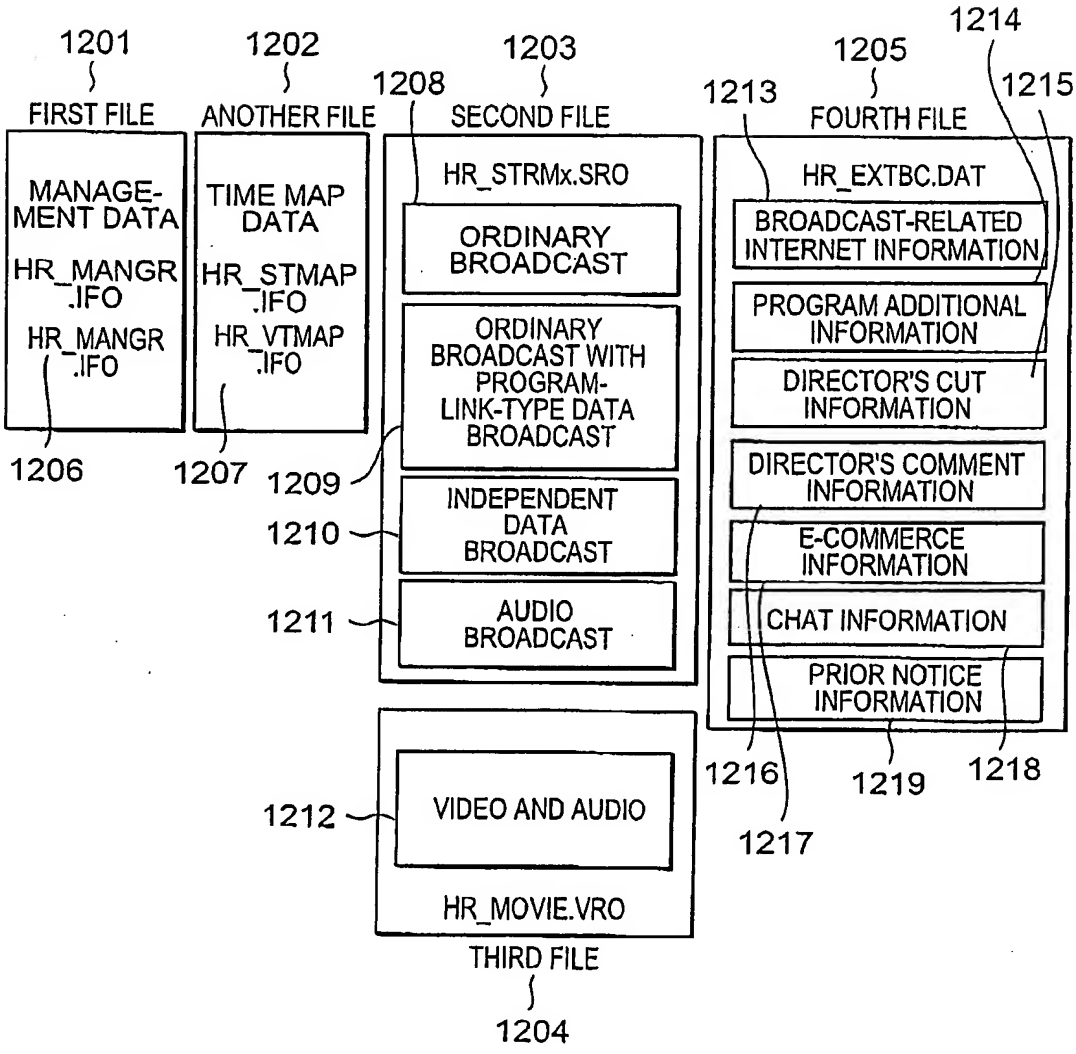
1201
FIRST FILE
MANAGE-MENT DATA
HR_MANGR.IFO
HR_MANGR.IFO
1206
1202
ANOTHER FILE
TIME MAP DATA
HR_STMAP.IFO
HR_VTMAP.IFO
1207
1203
1208
SECOND FILE
HR_STRMx.SRO
ORDINARY BROADCAST
ORDINARY BROADCAST WITH PROGRAM-LINK-TYPE DATA BROADCAST
1209
INDEPENDENT DATA BROADCAST
1210
AUDIO BROADCAST
1211
1212
VIDEO AND AUDIO
HR_MOVIE.VRO
THIRD FILE
1204
1205
FOURTH FILE
1213
1214
1215
HR_EXTBC.DAT
BROADCAST-RELATED INTERNET INFORMATION
PROGRAM ADDITIONAL INFORMATION
DIRECTOR'S CUT INFORMATION
DIRECTOR'S COMMENT INFORMATION
E-COMMERCE INFORMATION
CHAT INFORMATION
PRIOR NOTICE INFORMATION
1216
1217
1219
1218

FIG. 12

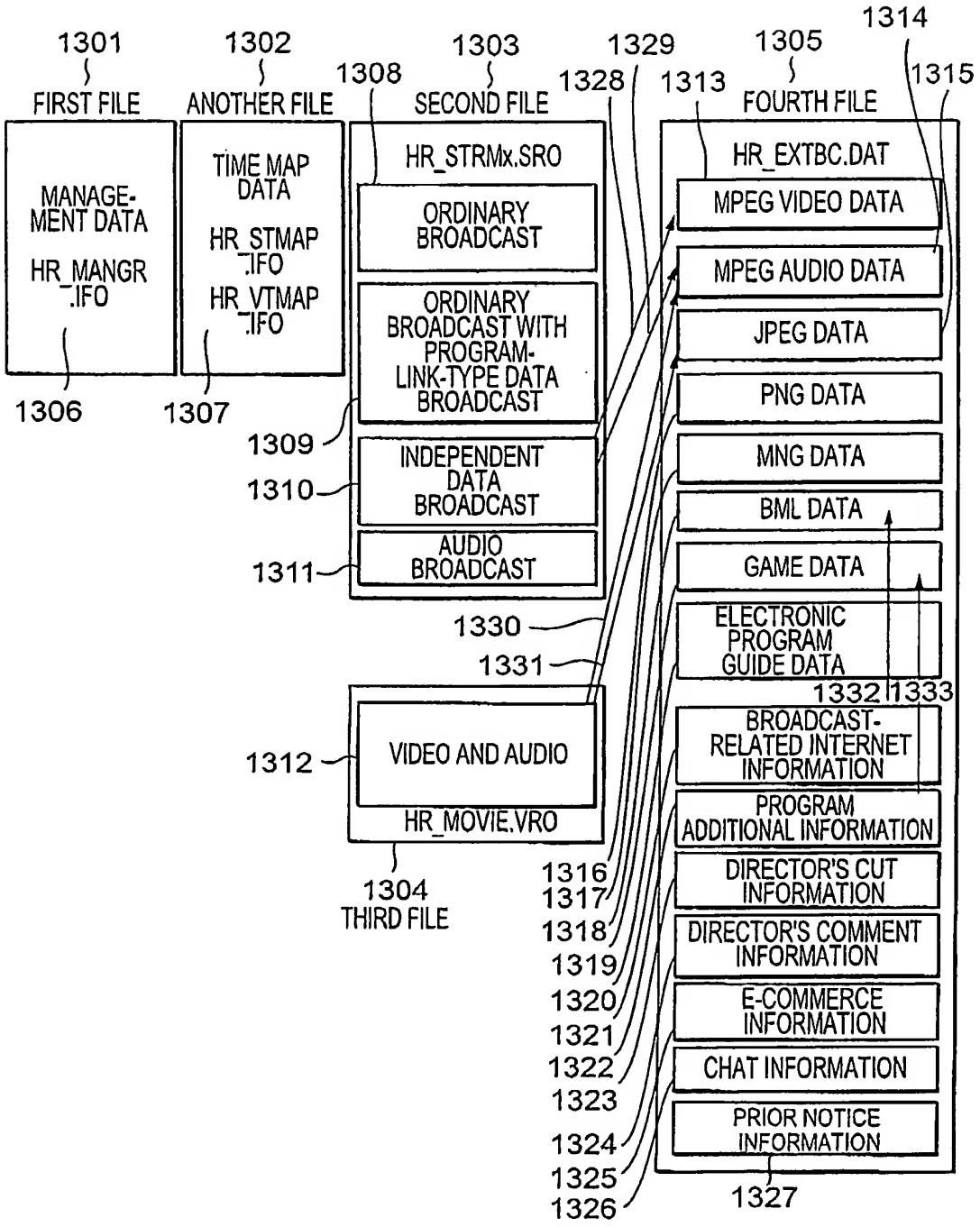
1301
FIRST FILE
1302
ANOTHER FILE
1303
SECOND FILE
1304
THIRD FILE
1305
FOURTH FILE
1306
1307
1308
1309
1310
1311
1312
1313
1314
1315
1316
1317
1318
1319
1320
1321
1322
1323
1324
1325
1326
1327
1328
1329
1330
1331
1332
1333
MANAGE-MENT DATA
HR_MANGR.IFO
TIME MAP DATA
HR_STMAP.IFO
HR_VTMAP.IFO
HR_STRMx.SRO
ORDINARY BROADCAST
ORDINARY BROADCAST WITH PROGRAM-LINK-TYPE DATA BROADCAST
INDEPENDENT DATA BROADCAST
AUDIO BROADCAST
VIDEO AND AUDIO
HR_MOVIE.VRO
HR_EXTBC.DAT
MPEG VIDEO DATA
MPEG AUDIO DATA
JPEG DATA
PNG DATA
MNG DATA
BML DATA
GAME DATA
ELECTRONIC PROGRAM GUIDE DATA
BROADCAST-RELATED INTERNET INFORMATION
PROGRAM ADDITIONAL INFORMATION
DIRECTOR'S CUT INFORMATION
DIRECTOR'S COMMENT INFORMATION
E-COMMERCE INFORMATION
CHAT INFORMATION
PRIOR NOTICE INFORMATION

FIG. 13

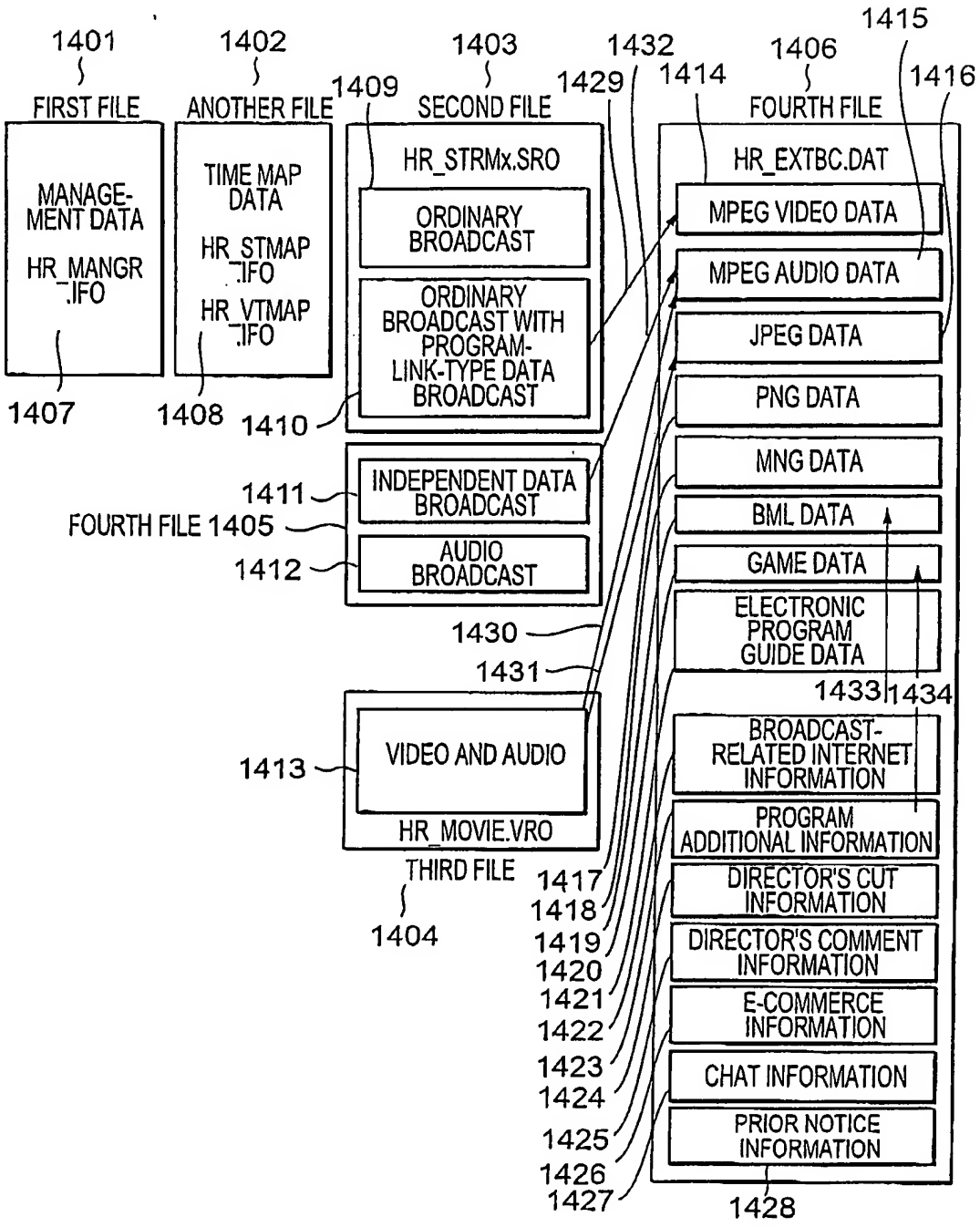
1401
FIRST FILE
MANAGE-MENT DATA
HR_MANGR.IFO
1407
1402
ANOTHER FILE
TIME MAP DATA
HR_STMAP.IFO
HR_VTMAP.IFO
1408
1403
SECOND FILE
1409
HR_STRMx.SRO
ORDINARY BROADCAST
ORDINARY BROADCAST WITH PROGRAM-LINK-TYPE DATA BROADCAST
1410
1411
INDEPENDENT DATA BROADCAST
FOURTH FILE 1405
1412
AUDIO BROADCAST
1430
1431
1413
VIDEO AND AUDIO
HR_MOVIE.VRO
THIRD FILE
1404
1432
1429
1414
1406
FOURTH FILE
1415
1416
HR_EXTBC.DAT
MPEG VIDEO DATA
MPEG AUDIO DATA
JPEG DATA
PNG DATA
MNG DATA
BML DATA
GAME DATA
ELECTRONIC PROGRAM GUIDE DATA
1433
1434
BROADCAST-RELATED INTERNET INFORMATION
PROGRAM ADDITIONAL INFORMATION
DIRECTOR'S CUT INFORMATION
DIRECTOR'S COMMENT INFORMATION
E-COMMERCE INFORMATION
CHAT INFORMATION
PRIOR NOTICE INFORMATION
1417
1418
1419
1420
1421
1422
1423
1424
1425
1426
1427
1428

FIG. 14

DVD_HDVR
HR_MANGR.IFO
STREAM FILE INFORMATION TABLE (STM_AVFIT)
STM_AVFIT INFORMATION (INFORMATION ON THE ENTIRE FILE) BROADCAST RECORDING FILE ID FLAG
(BROADCAST RECORDING FILE IDENTIFICATION FLAG)
0TH BIT 0: DIGITAL BROADCAST WITHOUT DATA BROADCAST NOT INCLUDED IN
HR_STRMX.SRO 1: INCLUDED
1ST BIT 0: DIGITAL BROADCAST WITH LINK-TYPE DATA BROADCAST NOT
INCLUDED IN HR_STRMX.SRO 1: INCLUDED
2ND BIT 0: INDEPENDENT BROADCAST NOT INCLUDED INHR_STRMX.SRO 1: INCLUDED
3RD BIT 0: INDEPENDENT AUDIO (RADIO) BROADCAST NOT INCLUDED IN HR_STRMX.SRO 1: INCLUDED
4TH BIT 0: TEXT BROADCAST NOT INCLUDED IN HR_STRMX.SRO 1: INCLUDED
5TH BIT 0: ANALOG BROADCAST NOT INCLUDED IN HR_STRMX.SRO 1: INCLUDED OTHER BITS: RESERVED
EXTRA BROADCAST RELATED DATA RECORDING FILE ID FLAG
(NON-BROADCAST RELATED INFORMATION RECORDING FILE IDENTIFICATION FLAG)
0TH BIT 0: RELATED INFORMATION OTHER THAN BROADCAST NOT INCLUDED IN
HR_STRMX.SRO 1: INCLUDED
OTHER BITS: RESERVED
SOB STREAM INFORMATION #1 TO SOB STREAM INFORMATION #N(INFORMATION ON SOB STREAMS)
BROADCAST ID FLAG (BROADCAST IDENTIFICATION FLAG)
BROADCAST FLAG (BROADCAST FLAG)
0TH BIT 0: DIGITAL BROADCAST WITHOUT DATA BROADCAST NOT INCLUDED IN SOB STREAM 1: INCLUDED
1ST BIT 0: DIGITAL BROADCAST WITH LINK-TYPE DATA BROADCAST NOT
INCLUDED IN SOB STREAM 1: INCLUDED
2ND BIT 0: INDEPENDENT BROADCAST NOT INCLUDED IN SOB STREAM 1: INCLUDED
3RD BIT 0: INDEPENDENT AUDIO (RADIO) BROADCAST NOT INCLUDED IN SOB STREAM 1: INCLUDED
4TH BIT 0: TEXT BROADCAST NOT INCLUDED IN SOB STREAM 1: INCLUDED
5TH BIT 0: ANALOG BROADCAST NOT INCLUDED IN SOB STREAM 1: INCLUDED
OTHER BITS: RESERVED
COPY MOVE FLAG (COPIED OR MOVED)
000: ORIGINAL, 001: COPIED, 010: MOVED, 011-111: OTHERS
SOURCE FILE INFORMATION (SOURCE FILE INFORMATION)
000: ORIGINAL
001: COPIED OR MOVED DATA, AND NO SOURCE EXISTS OR LOCATION OF SOURCE IS NOT KNOWN
010: COPIED OR MOVED DATA, AND SOURCE EXISTS IN HR_STRMX.SRO
011: COPIED OR MOVED DATA, AND SOURCE EXISTS IN HR_SMOVIE.VRO
100: COPIED OR MOVED DATA, AND SOURCE EXISTS IN EXTBC.DAT
101-111: RESERVED
SOURCE STREAM NAME (SOURCE STREAM NAME)
STREAM NAME IF EXISTS, ALL "0" IF NOT EXISTS
SOURCE STREAM NUMBER (SOURCE STREAM NUMBER)
SOB NUMBER, VOB NUMBER, OR EXTRA STREAM NUMBER OF SOURCE STREAM
SOURCE VIDEO MODE (SOURCE VIDEO MODE)
000: MPEG-2, 001: MPEG-1, 010: MPEG-4, 011: H.264, 100: WM9,

FIG. 15

101-111: RESERVED
SOURCE AUDIO MODE (SOURCE AUDIO MODE)
000: MPEG-2 AAC, 001: DOLBY AC-3, 010: MPEG-1, 011: MPEG-2 BC
100: DTS, 101: LPCM, 110-111: RESERVED
SOURCE STILL-PICTURE MODE (SOURCE STILL-PICTURE MODE)
000: JPEG, 001: PNG, 010-111: RESERVED
SOURCE ANIMATION MODE (SOURCE ANIMATION MODE)
000: MNG, 001-111: RESERVED
SOURCE DATA BROADCAST MODE (SOURCE DATA BROADCAST MODE)
000: BML, 001-111: RESERVED
SOURCE GAME DATA MODE (SOURCE GAME DATA MODE, 000-111: RESERVED)
SOURCE EPG DATA MODE (SOURCE EPG DATA MODE, 000-111: RESERVED)
SOURCE GRAPHIC MODE (SOURCE GRAPHIC MODE, 000-111: RESERVED)
SOURCE 3D VIDEO MODE (SOURCE THREE-DIMENSIONAL VIDEO MODE, 000-111: RESERVED)
SOURCE STREAM MODE (SOURCE STREAM MODE)
000: TS, 001: PS, 010: PES, 011: ES
100-111: RESERVED
RECORDED DATA VIDEO MODE (VIDEO MODE
000: MPEG-2, 001: MPEG-1, 010: MPEG-4, 011: H.264, 100: WM9
101-111: RESERVED
RECORDED DATA AUDIO MODE (AUDIO MODE)
000: MPEG-2 AAC, 001: DOLBY AC-3, 010: MPEG-1, 011: MPEG-2 BC, 100: DTS, 101: LPCM
110-111: RESERVED
RECORDED DATA STILL-PICTURE MODE (STILL-PICTURE MODE)
000: JPEG, 001: PNG, 010-111: RESERVED
RECORDED DATA ANIMATION MODE (ANIMATION MODE)
000: MNG, 001-111: RESERVED
RECORDED DATA DATA BROADCAST MODE (DATA BROADCAST MODE)
000: BML, 001-111: RESERVED
RECORDED DATA GAME DATA MODE (GAME DATA MODE, 000-111: RESERVED)
RECORDED DATA EPG DATA MODE (EPG DATA MODE, 000-111: RESERVED)
RECORDED DATA GRAPHIC MODE (GRAPHIC MODE, 000-111: RESERVED)
RECORDED DATA 3D VIDEO MODE (3D VIDEO MODE, 000-111: RESERVED)
RECORDED DATA STREAM MODE (STREAM MODE)
000: TS, 001: PS, 010: PES, 011: ES
100-111: RESERVED
EXTRA BROADCAST RELATED DATA ID FLAG
(RELATED INFORMATION IDENTIFICATION FLAG OTHER THAN BROADCAST)
EXTRA BROADCAST RELATED DATA FLAG
(RELATED INFORMATION FLAG OTHER THAN BROADCAST)
0TH BIT 0: RELATED INFORMATION OTHER THAN BROADCAST NOT INCLUDED SOB STREAM,
1: INCLUDED
OTHER BITS: RESERVED

FIG. 16

BROADCAST RELATED DATA CONTENT
(RELATED INFORMATION CONTENTS OTHER THAN BROADCAST)
000: RELATED INFORMATION OTHER THAN BROADCAST IS ORDINARY INTERNET DATA
001: STREAMING DATA
010: OTHERS, 011-111: RESERVED
DATA BROADCAST DATA (DATA BROADCAST RELATED DATA)
TRANSMISSION MODE
00: DATA CAROUSEL MODE
01: EVENT MESSAGE TRANSMISSION MODE
10: TRANSMISSION MODE INCLUDING BOTH
11: RESERVED
DATA CARROUSEL AUTO RENEWAL
00: MODE OF RECORDING ALL DATA IN BROADCAST DATA CAROUSEL
01: MODE OF SELECTIVELY RECORDING ONLY UPDATED IN BROADCAST DATA CAROUSEL
10-11: RESERVED
REFRESH FLAG
00: AUTOMATIC UPDATE OF OLD DATA WITH NEW DATA IS OFF FOR NEWS, WEATHER FORECAST, STOCK INFORMATION, ETC.
01: AUTOMATIC UPDATE OF OLD DATA WITH NEW DATA IS ON FOR NEWS, WEATHER FORECAST, STOCK INFORMATION, ETC.
10-11: RESERVED
REFRESH START TIME
LATEST DATA UPDATE START TIME (5 BYTES)
YEAR (14 BITS), MONTH (4 BITS), DAY (5 BITS)
HOUR (5 BITS), MINUTE (6 BITS), AND SECOND (6 BITS)
REFRESH END TIME
LATEST DATA UPDATE END TIME (5 BYTES)
YEAR (14 BITS), MONTH (4 BITS), DAY (5 BITS)
HOUR (5 BITS), MINUTE (6 BITS), AND SECOND (6 BITS)
TIME MAP FLAG
00: STREAM HAS NO TIME MAP
01: STREAM HAS TIME MAP
10-11: RESERVED
STORAGE BROADCAST FLAG
00: ORDINARY BROADCAST STREAM
01: SERVER-TYPE BROADCAST STREAM
10-11: RESERVED

FIG. 17

MOVIE AV FILE INFORMATION TABLE (A_AVFIT)
M_AVFIT INFORMATION (INFORMATION ON THE ENTIRE FILE)
BROADCAST RECORDING FILE ID FLAG (BROADCAST RECORDING FILE IDENTIFICATION FLAG)
0TH BIT 0: DIGITAL BROADCAST WITHOUT DATA BROADCAST NOT INCLUDED IN HR_MOVIE.VOB, 1: INCLUDED
1ST BIT 0: DIGITAL BROADCAST WITH LINK-TYPE DATA BROADCAST NOT INCLUDED IN HR_MOVIE.VOB, 1: INCLUDED
2ND BIT 0: INDEPENDENT BROADCAST NOT INCLUDED IN HR_MOVIE.VOB, 1: INCLUDED
3RD BIT 0: INDEPENDENT AUDIO (RADIO) BROADCAST NOT INCLUDED IN HR_MOVIE.VOB, 1: INCLUDED
4TH BIT 0: TEXT BROADCAST NOT INCLUDED IN HR_MOVIE.VOB, 1: INCLUDED
5TH BIT 0: ANALOG BROADCAST NOT INCLUDED IN HR_MOVIE.VOB, 1: INCLUDED
OTHER BITS: RESERVED
EXTRA BROADCAST RELATED DATA RECORDING FILE ID FLAG (RELATED INFORMATION RECORDING FILE IDENTIFICATION FLAG OTHER THAN BROADCAST)
0TH BIT 0: NON-BROADCAST RELATION INFORMATION NOT INCLUDED IN HR_MOVIE.VOB, 1: INCLUDED
OTHER BITS: RESERVED
MOVIE VOB INFORMATION #1- MOVIE VOB INFORMATION #N (INFORMATION ON VOBS)
BROADCAST ID FLAG (BROADCAST IDENTIFICATION FLAG)
BROADCAST FLAG (BROADCAST FLAG)
0TH BIT 0: DIGITAL BROADCAST WITHOUT DATA BROADCAST NOT INCLUDED IN MOVIE VOB, 1: INCLUDED
1ST BIT 0: DIGITAL BROADCAST WITH LINK-TYPE DATA BROADCAST NOT INCLUDED IN MOVIE VOB, 1: INCLUDED
2ND BIT 0: INDEPENDENT DATA BROADCAST NOT INCLUDED IN MOVIE VOB, 1: INCLUDED
3RD BIT 0: INDEPENDENT AUDIO (RADIO) BROADCAST NOT INCLUDED IN MOVIE VOB, 1: INCLUDED
4TH BIT 0: TEXT BROADCAST NOT INCLUDED IN MOVIE VOB, 1: INCLUDED
5TH BIT 0: ANALOG BROADCAST NOT INCLUDED IN MOVIE VOB, 1: INCLUDED
OTHER BITS: RESERVED
COPY MOVE FLAG (COPIED OR MOVED)
000: ORIGINAL, 001: COPIED, 010: MOVED, 011-111: OTHERS
SOURCE FILE INFORMATION (SOURCE FILE INFORMATION)
000: ORIGINAL
001: COPIED OR MOVED DATA, AND NO SOURCE EXISTS OR LOCATION OF SOURCE IS NOT KNOWN
010: COPIED OR MOVED DATA, AND SOURCE EXISTS IN HR_STRMX.SRO
011: COPIED OR MOVED DATA, AND SOURCE EXISTS IN HR_MOVIE.VRO
100: COPIED OR MOVED DATA, AND SOURCE EXISTS IN HR_EXTBC.DAT
101-111: RESERVED
SOURCE STREAM NAME (SOURCE STREAM NAME)
STREAM NAME IF EXISTS, ALL "0" IF NOT EXISTS
SOURCE STREAM NUMBER (SOURCE STREAM NUMBER)
SOB NUMBER, VOB NUMBER, OR EXTRA STREAM NUMBER OF SOURCE STREAM
SOURCE VIDEO MODE (SOURCE VIDEO MODE)
000: MPEG-2, 001: MPEG-1, 010: MPEG-4, 011; H.264, 100: WM9
101-111: RESERVED
SOURCE AUDIO MODE (SOURCE AUDIO MODE)
000: MPEG-2 AAC, 001: DOLBY AC-3, 010: MPEG-1, 011: MPEG-2 BC, 100: DTS, 101: LPCM
110-111: RESERVED

FIG. 18

SOURCE STILL-PICTURE MODE (SOURCE STILL-PICTURE MODE)
000: JPEG, 001: PNG, 010-111: RESERVED
SOURCE ANIMATION MODE (SOURCE ANIMATION MODE)
000: MNG, 001-111: RESERVED
SOURCE DATA BROADCAST MODE (SOURCE DATA BROADCAST MODE)
000: BML, 001-111: RESERVED
SOURCE GAME DATA MODE (SOURCE GAME DATA MODE, 000-111: RESERVED)
SOURCE EPG DATA MODE (SOURCE EPG DATA MODE, 000-111: RESERVED)
SOURCE GRAPHIC MODE (SOURCE GRAPHIC MODE, 000-111: RESERVED)
SOURCE 3D VIDEO MODE (SOURCE THREE-DIMENSIONAL VIDEO MODE, 000-111: RESERVED)
SOURCE STREAM MODE (SOURCE STREAM MODE)
000: TS, 001: PS, 010: PES, 011: ES,
100-111: RESERVED
RECORDED DATA VIDEO MODE (VIDEO MODE)
000: MPEG-2, 001: MPEG-1, 010: MPEG-4, 011: H.264, 100: WM9,
101-111: RESERVED
RECORDED DATA AUDIO MODE (AUDIO MODE)
000: MPEG-2 AAC, 001: DOLBY AC-3, 010: MPEG-1, 011: MPEG-2 BC, 100: DTS, 101: LPCM,
110-111: RESERVED
RECORDED DATA STILL-PICTURE MODE (STILL-PICTURE MODE)
000: JPEG, 001: PNG, 010-111: RESERVED
RECORDED DATA ANIMATION MODE (ANIMATION MODE)
000: MNG, 001-111: RESERVED
RECORDED DATA DATA BROADCAST MODE (DATA BROADCAST MODE)
000: BML, 001-111: RESERVED
RECORDED DATA GAME DATA MODE (GAME DATA MODE, 000-111: RESERVED)
RECORDED DATA EPG DATA MODE (EPG DATA MODE, 000-111: RESERVED)
RECORDED DATA GRAPHIC DATA MODE (GRAPHIC DATA MODE, 000-111: RESERVED)
RECORDED DATA 3D VIDEO MODE (THREE-DIMENSIONAL VIDEO MODE, 000-111: RESERVED)
RECORDED DATA STREAM MODE (STREAM MODE)
000: TS, 001: PS, 010: PES, 011: ES,
100-111: RESERVED
EXTRA BROADCAST RELATED DATA ID FLAG
(RELATED INFORMATION IDENTIFICATION FLAG OTHER THAN BROADCAST)
EXTRA BROADCAST RELATED DATA FLAG
(RELATED INFORMATION FLAG OTHER THAN BROADCAST)
0TH BIT 0: RELATED INFORMATION OTHER THAN BROADCAST NOT INCLUDED IN MOVIE VOB,
1: INCLUDED
OTHER BITS: RESERVED
BROADCAST RELATED DATA CONTENT
(RELATED INFORMATION CONTENT OTHER THAN BROADCAST)
000: NON-BROADCAST INFORMATION IS ORDINARY INTERNET DATA, 00: STREAMING DATA,
010: OTHERS,011-111: RESERVED

FIG. 19

XTRA BROADCAST FILE INFORMATION TABLE (EXT_AVFIT)
EXT_AVFIT INFORMATION (INFORMATION ON THE ENTIRE FILE)
BROADCAST RECORDING FILE ID FLAG (BROADCAST RECORDING FILE IDENTIFICATION FLAG)
0TH BIT 0: DIGITAL BROADCAST WITHOUT DATA BROADCAST NOT INCLUDED IN HR_EXTBC.DAT, 1: INCLUDED
1ST BIT 0: DIGITAL BROADCAST WITH LINK-TYPE DATA BROADCAST NOT INCLUDED IN HR_EXTBC.DAT, 1: INCLUDED
2ND BIT 0: INDEPENDENT DATA BROADCAST NOT INCLUDED IN HR_EXTBC.DAT, 1: INCLUDED
3RD BIT 0: INDEPENDENT AUDIO (RADIO) BROADCAST NOT INCLUDED IN HR_EXTBC.DAT, 1: INCLUDED
4TH BIT 0: TEXT BROADCAST NOT INCLUDED IN HR_EXTBC.DAT, 1: INCLUDED
5TH BIT 0: ANALOG BROADCAST NOT INCLUDED IN HR_EXTBC.DAT, 1: INCLUDED
OTHER BITS: RESERVED
EXTRA BROADCAST RELATED DATA RECORDING FILE ID FLAG
(RELATED INFORMATION RECORDING FILE IDENTIFICATION FLAG OTHER THAN BROADCAST)
0TH BIT 0: RELATED INFORMATION OTHER THAN BROADCAST NOT INCLUDED IN HR_EXTBC.DAT, 1: INCLUDED
OTHER BITS: RESERVED
EXTRA STREAM INFORMATION #1 TO EXTRA STREAM INFORMATION #N (INFORMATION ON EACH STREAM)
BROADCAST ID FLAG (BROADCAST IDENTIFICATION FLAG)
BROADCAST FLAG (BROADCAST FLAG)
0TH BIT 0: DIGITAL BROADCAST WITHOUT DATA BROADCAST NOT INCLUDED IN EXTRA STREAM, 1: INCLUDED
1ST BIT 0: DIGITAL BROADCAST WITH LINK-TYPE DATA BROADCAST NOT INCLUDED IN EXTRA STREAM, 1: INCLUDED
2ND BIT 0: INDEPENDENT DATA BROADCAST NOT INCLUDED IN EXTRA STREAM, 1: INCLUDED
3RD BIT 0: INDEPENDENT AUDIO (RADIO) BROADCAST NOT INCLUDED IN EXTRA STREAM, 1: INCLUDED
4TH BIT 0: TEXT BROADCAST NOT INCLUDED IN EXTRA STREAM, 1: INCLUDED
5TH BIT 0: ANALOG BROADCAST NOT INCLUDED IN EXTRA STREAM, 1: INCLUDED
OTHER BITS: RESERVED
COPY MOVE FLAG (COPIED OR MOVED)
000: ORIGINAL, 001: COPIED, 010: MOVED, 011-111: OTHERS
SOURCE FILE INFORMATION (SOURCE FILE INFORMATION)
000: ORIGINAL
001: COPIED OR MOVED DATA, AND NO SOURCE EXISTS OR LOCATION OF SOURCE IS NOT KNOWN
010: COPIED OR MOVED DATA, AND SOURCE EXISTS IN HR_STRMX.SRO
011: COPIED OR MOVED DATA, AND SOURCE EXISTS IN HR_MOVIE.VRO
100: COPIED OR MOVED DATA, AND SOURCE EXISTS IN HR_EXTBC.DAT
101-111: RESERVED
SOURCE STREAM NAME (SOURCE STREAM NAME)
STREAM NAME IF EXISTS, ALL "0" IF NOT EXISTS
SOURCE STREAM NUMBER (SOURCE STREAM NUMBER)
SOB NUMBER, VOB NUMBER, OR EXTRA STREAM NUMBER OF SOURCE STREAM
SOURCE VIDEO MODE (SOURCE VIDEO MODE)
000: MPEG-2, 001: MPEG-1, 010: MPEG-4, 011; H.264, 100: WM9,
101-111: RESERVED
SOURCE AUDIO MODE (SOURCE AUDIO MODE)
000: MPEG-2 AAC, 001: DOLBY AC-3, 010: MPEG-1, 011: MPEG-2 BC, 100: DTS, 101: LPCM,
110-111: RESERVED

FIG. 20

SOURCE STILL-PICTURE MODE (SOURCE STILL-PICTURE MODE)
000: JPEG, 001: PNG, 010-111: RESERVED
SOURCE ANIMATION MODE (SOURCE ANIMATION MODE)
000: MNG, 001-111: RESERVED
SOURCE DATA BROADCAST MODE (SOURCE DATA BROADCAST MODE)
000: BML, 001-111: RESERVED
SOURCE GAME DATA MODE (SOURCE GAME DATA MODE, 000-111: RESERVED)
SOURCE EPG DATA MODE (SOURCE EPG DATA MODE, 000-111: RESERVED)
SOURCE GRAPHIC MODE (SOURCE GRAPHIC MODE, 000-111: RESERVED)
SOURCE 3D VIDEO MODE (SOURCE THREE-DIMENSIONAL VIDEO MODE, 000-111: RESERVED)
SOURCE STREAM MODE (SOURCE STREAM MODE)
000: TS, 001: PS, 010: PES, 011: ES,
100-111: RESERVED
RECORDED DATA VIDEO MODE (VIDEO MODE)
000: MPEG-2, 001: MPEG-1, 010: MPEG-4, 011: H.264, 100: WM9,
101-111: RESERVED
RECORDED DATA AUDIO MODE (AUDIO MODE)
000: MPEG-2 AAC, 001: DOLBY AC-3, 010: MPEG-1, 011: MPEG-2 BC, 100: DTS, 101: LPCM,
110-111: RESERVED
RECORDED DATA STILL-PICTURE MODE (STILL-PICTURE MODE)
000: JPEG, 001: PNG, 010-111: RESERVED
RECORDED DATA ANIMATION MODE (ANIMATION MODE)
000: MNG, 001-111: RESERVED
RECORDED DATA DATA BROADCAST MODE (DATA BROADCAST MODE)
000: BML, 001-111: RESERVED
RECORDED DATA GAME DATA MODE (GAME DATA MODE, 000-111: RESERVED)
RECORDED DATA EPG DATA MODE (EPG DATA MODE, 000-111: RESERVED)
RECORDED DATA GRAPHIC MODE (GRAPHIC MODE, 000-111: RESERVED)
RECORDED DATA 3D VIDEO MODE (THREE-DIMENSIONAL VIDEO MODE, 000-111: RESERVED)
RECORDED DATA STREAM MODE (STREAM MODE)
000: TS, 001: PS, 010: PES, 011: ES,
100-111: RESERVED
EXTRA BROADCAST RELATED DATA ID FLAG
(RELATED INFORMATION IDENTIFICATION FLAG OTHER THAN BROADCAST)
EXTRA BROADCAST RELATED DATA FLAG
(RELATED INFORMATION FLAG OTHER THAN BROADCAST)
0TH BIT 0: RELATED INFORMATION OTHER THAN BROADCAST NOT INCLUDED IN
EXTRA STREAM, 1: INCLUDED
OTHER BITS: RESERVED
BROADCAST RELATED DATA CONTENT
(RELATED INFORMATION CONTENT OTHER THAN BROADCAST)
000: NON-BROADCAST INFORMATION IS ORDINARY INTERNET DATA,
00: STREAMING DATA, 010: OTHERS, 011-111: RESERVED

FIG. 21

DATA BROADCAST DATA (DATA BROADCAST RELATED DATA)
TRANSMISSION MODE
00: DATA CAROUSEL MODE
01: EVENT MESSAGE TRANSMISSION MODE
10: TRANSMISSION MODE INCLUDING BOTH
11: RESERVED
DATA CAROUSEL AUTO RENEWAL
00: MODE OF RECORDING ALL DATA IN BROADCAST CAROUSEL DATA
01: MODE OF SELECTIVELY RECORDING ONLY UPDATED DATA IN BROADCAST DATA CAROUSEL
10-11: RESERVED
REFRESH FLAG
00: AUTOMATIC UPDATE OF OLD DATA WITH NEW DATA IS OFF FOR NEWS, WEATHER FORECAST, STOCK INFORMATION, ETC.
01: AUTOMATIC UPDATE OF OLD DATA WITH NEW DATA IS ON FOR NEWS, WEATHER FORECAST, STOCK INFORMATION, ETC.
10-11: RESERVED
REFRESH START TIME
LATEST DATA UPDATE START TIME (5 BYTES)
YEAR (14 BITS), MONTH (4 BITS), DAY (5 BITS),
HOUR (5 BITS), MINUTE (6 BITS), AND SECOND (6 BITS)
REFRESH END TIME
LATEST DATA UPDATE END TIME (5 BYTES)
YEAR (14 BITS), MONTH (4 BITS), DAY (5 BITS),
HOUR (5 BITS), MINUTE (6 BITS), AND SECOND (6 BITS)
TIME MAP FLAG
00: STREAM HAS NO TIME MAP
01: STREAM HAS TIME MAP
10-11: RESERVED
STORAGE BROADCAST FLAG
00: ORDINARY BROADCAST STREAM
01: SERVER-TYPE BROADCAST STREAM
10-11: RESERVED

FIG. 22

HR_STMAP.IFO
1PMT PARTIAL TS TIME MAP TABLE IN HR_STRX.SRO
1STREF_SZ: SOBU 1ST REFERENCE PICTURE SIZE
SOBU_PB_TM: SOBU REPRODUCTION TIME (NUMBER OF VIDEO FIELDS)
SOBU_SZ: SOBU SIZE (NUMBER OF SECTORS)
HR_VTMAP.IFO
HR_MOVIE.VRO TIME MAP TABLE
1STREF_SZ: VOBU 1ST REFERENCE PICTURE SIZE
VOBU_PB_TM: VOBU REPRODUCTION TIME (NUMBER OF VIDEO FIELDS)
VOBU_SZ: VOBU SIZE (NUMBER OF SECTORS)
HR_STRMX.SRO
DIGITAL BROADCAST, DIGITAL BROADCAST WITH PROGRAM-LINK-TYPE DATA
BROADCAST, INDEPENDENT DATA BROADCAST,
AUDIO BROADCAST STREAM
TEXT BROADCAST DATA
HR_MOVIE.VRO
ANALOG BROADCAST VIDEO/AUDIO STREAM
HR_EXTBC.DAT
DATA FILE HAVING DATA BROADCAST DIRECTLY RECORDED,
OR PARTIALLY COPIED OR MOVED, AND OTHER STREAMS

FIG. 23

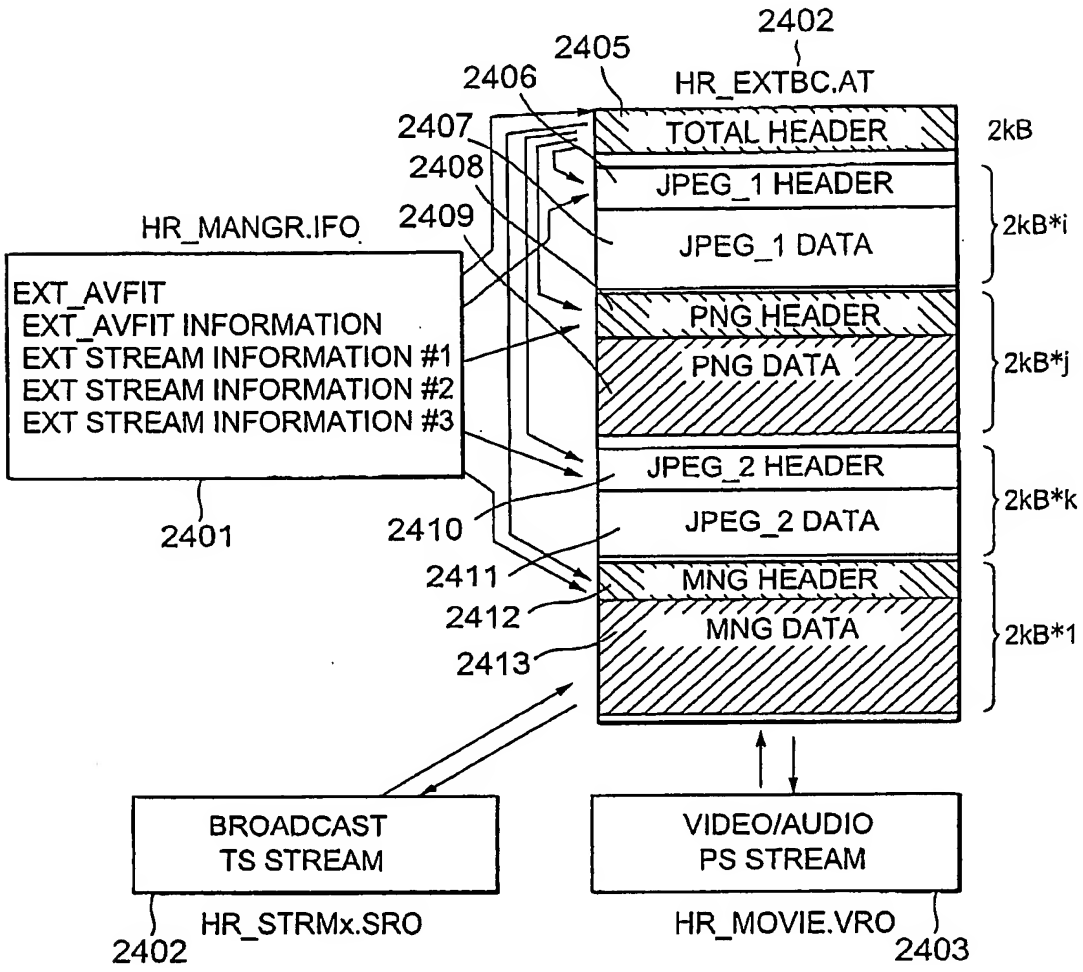
2402
2405
2406
HR_EXTBC.AT
2407
TOTAL HEADER
2kB
2408
JPEG_1 HEADER
2409
JPEG_1 DATA
2kB*i
HR_MANGR.IFO
EXT_AVFIT
EXT_AVFIT INFORMATION
EXT STREAM INFORMATION #1
EXT STREAM INFORMATION #2
EXT STREAM INFORMATION #3
PNG HEADER
PNG DATA
2kB*j
JPEG_2 HEADER
JPEG_2 DATA
2kB*k
2401
2410
2411
MNG HEADER
2412
MNG DATA
2kB*1
2413
BROADCAST
TS STREAM
VIDEO/AUDIO
PS STREAM
2402
HR_STRMx.SRO
HR_MOVIE.VRO
2403

FIG. 24